

SYSTEMS AND METHODS FOR CORRECTING THERMAL DISTORTION POINTING ERRORS

ABSTRACT OF THE DISCLOSURE

One embodiment of the present invention relates to a system for correcting spacecraft thermal distortion pointing errors. The system comprises one or more spacecraft sensors located at positions on a spacecraft and which are adapted to measure spacecraft parameters at those positions. The system also includes a spacecraft distortion prediction module, which is adapted to generate expected spacecraft thermal distortion parameter values and expected antenna thermal distortion pointing errors. Further, the system includes a spacecraft parameter processing module adapted to generate measured spacecraft thermal distortion parameter values from the measured spacecraft parameters, and an antenna pointing error calculation module adapted to calculate antenna pointing error correction commands. Finally, the system includes an antenna pointing control module adapted to receive the antenna pointing correction commands and control the adjustment of the antenna pointing using the correction commands.

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